

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A method of manufacturing rare earth thick film magnet comprising:

a1 a step forming $R_xB_yTM_z$ alloy ~~layer~~ thick film of 30 to 100 μm in thickness on a substrate by a ~~physical deposition~~ laser abrasion process; and

a step of heat-treating said alloy ~~layer~~ thick film to form a thick film magnetic layer having $R_2TM_{14}B$ as main phase,

where R is at least one selected from rare earth elements, B is boron, TM is iron or iron alloy partly substituted by cobalt, and $X : 0.1 - 0.2$, $Y : 0.05 - 0.2$ and $Z = 1 - X - Y$.

Claim 2 (currently amended): The method of claim 1, further comprising a step of laminating a plurality of said alloy ~~layers~~ thick films formed on said substrate.

Claim 3 (canceled)

Claim 4 (original): The method of claim 1, wherein said substrate is made of iron including at least one element selected from the group consisting of nickel, cobalt, silicon, nitrogen, and boron and having at least 13 kG in saturated magnetization.

Claim 5 (original): The method of claim 4, wherein said substrate includes tantalum on a surface thereof.

Claim 6 (original): The method of claim 4, wherein said substrate includes ion-implanted tantalum on a surface thereof.

Claim 7 (currently amended): The method of claim 1, wherein a film-formation speed in said forming alloy ~~layer~~ thick film is 50 $\mu m/hr$ or more.

Claim 8 (currently amended): The method of claim 1, wherein a degree of vacuum in said forming alloy ~~layer~~ thick film is 10^{-6} Torr or less.

Claim 9 (currently amended): The method of claim 1, wherein said alloy ~~layer~~ thick film is heat-treated at 650 - 750 °C, and the coercive force of said rare earth thick film magnet is 6 kOe or more.

Claim 10 (currently amended): The method of claim 1, wherein said heat-treating step further comprises a step of applying electric current directly to said alloy ~~layer~~ thick film while said alloy ~~layer~~ thick film is being pressed in a direction of thickness.

Claim 11 (currently amended): The method of claim 10, wherein a surface of said alloy ~~layer~~ thick film is smoothed by said pressing.

Claim 12 (currently amended): The method of claim 2, wherein said heat-treating step further comprises a step of applying electric current directly to said plurality of laminated alloy ~~layer~~ thick films while said plurality of laminated alloy ~~layers~~ thick films is being pressed in a direction of thickness.

Claim 13 (canceled)

Claim 14 (currently amended): The method of claim ~~10~~ 12, wherein said heat-treating step is processed at a heating speed of higher than 9 °C/second, at a pressure of 200 - 400 kgf/cm², and at a degree of vacuum of 1 Torr or less.

Claim 15 (withdrawn): A motor comprising a rare earth thick film magnet manufactured by the method of any one of claims 1 to 11.

Claim 16 (withdrawn): A motor of claim 14, wherein a motor and a stator are configured in flat-plate shape.

Claim 17 (withdrawn): A radial air gap type magnet motor comprising:

a mover comprising a rare earth thick film magnet and a rotary shaft, said rare earth thick film magnet being crystallized by a heat treatment after being fixed to an inner wall of a mover frame by curling; and
a stator opposing to said mover via air gap.

Claim 18 (currently amended): A method of manufacturing a motor comprising rare earth thick film magnet comprising:

1
a step forming $R_X B_Y T M_Z$ alloy ~~layer~~ thick film of 30 to 100 μm in thickness on a substrate by a ~~physical deposition~~ laser abrasion process;
a step of heat-treating said alloy ~~layer~~ thick film to form a thick film magnetic layer having $R_2 T M_{14} B$ as main phase;
a step of manufacturing thick film magnet by magnetizing said thick film magnetic layer;
and
a step of building said thick film magnet into a motor,
where R is at least one selected from rare earth elements, B is boron, TM is iron or iron alloy partly substituted by cobalt, and $X : 0.1 - 0.2$, $Y : 0.05 - 0.2$ and $Z = 1 - X - Y$.

Claim 19 (currently amended): The method of claim 18, further comprising a step of laminating a plurality of said alloy ~~layer~~ thick films formed on said substrate.

Claim 20 (canceled)

Claim 21 (original): The method of claim 18, wherein said substrate is made of iron including at least one element selected from the group consisting of nickel, cobalt, silicon, nitrogen, and boron and having at least 13 kG in saturated magnetization.

Claim 22 (original): The method of claim 18, where said substrate includes tantalum on a surface thereof.

Claim 23 (original): The method of claim 18, wherein said substrate includes ion-implanted tantalum on a surface thereof.